HARTCROWSER

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J-2296-07

August 29, 1997

Mr. Gregory A. Rapp
Construction Services Manager
Potlatch Corporation
1100 Railroad Avenue
P.O. Box 386
St. Maries, Idaho 83861

Re: First Quarter Performance Report for 1997
Avery Landing Recovery System

Dear Mr. Rapp:

Hart Crowser is pleased to present the First Quarter Performance Report for 1997 for the free product recovery system at the Avery Landing site. This letter report presents the first quarter groundwater elevation and product thickness measurements.

GROUNDWATER AND PRODUCT QUARTERLY MONITORING

Four extraction wells (EW-1, EW-2, EW-3, and EW-4), four monitoring wells (HC-1, HC-4, MW-5, and MW-11), and two piezometers (P-1, and P-2) were monitored on July 17, 1997. The locations of the monitoring points have been indicated in previous quarterly monitoring reports. At each monitoring location, depth to product, product thickness, and depth to groundwater measurements were recorded. These measurements are presented with those of previous monitoring rounds in Table 1 at the end of the text. If a location indicated the presence of product but we were unable to obtain product-related measurements, it is indicated in Table 1 as a sheen

in the depth to product column. The river elevation was also monitored by taking measurements of the elevation change between the top of the extraction vaults and the river.

Extraction wells EW-2 and EW-3 contained 0.1 and 0.2 foot of product, respectively. Extraction well EW- 4 had a trace of product detected. Wells HC-4 and MW-11 continue to have product present with thicknesses of 1.6 and 3.66 feet, respectively. Wells HC-1, HC-5, MW-5, and the piezometers did not indicate the presence of product.

The entire system seemed to be working properly for this monitoring event. The general trends observed during this round of monitoring were consistent with previous rounds.

Though the system was not maintaining absolute containment, the depression in the groundwater level does seem to be collecting the free product. This is based on no free product escaping to the river. During this visit the extraction well pumps were lowered to their maximum depth as recommended in the third quarter report from 1996.

PROJECT SCHEDULE

Table 2 presents the project schedule for the remainder of 1997. As indicated, we will monitor and prepare one more Quarterly Performance Report and one Annual Report for 1997. If you should decide that any of these dates need to be altered, please let us know as soon as possible.

Table 2 - Avery Landing Recovery System
Remaining Project Schedule for 1997

Remaining Schedule	Date
Conduct 2nd Quarter Monitoring	October 9, 1997
Submit 2nd Quarter Performance Report	November 12, 1997
Submit Annual Report	December 27, 1997

LIMITATIONS

Work for this project was performed, and this letter prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar location, at the time the work was performed. It is intended for the exclusive use of the Potlatch Corporation for specific application to the referenced property.

If additional information or clarification is required, please call Terry Montoya at (206) 324-9530.

Sincerely,

HART CROWSER, INC.

TERRY MONTOYA
Project Engineer

BARRY L. KELLEMS, P.E.
Associate

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Attachments:

Table 1 - Avery Landing Groundwater Monitoring Data

cc: Kreg Beck, Idaho Department of Environmental Quality

Table 1 - Avery Landing Groundwater Monitoring Data

Monitoring Location	Date	Depth to Product	Depth to Water	Product Thickness	T.O.C. Elevation	roundwater Elevation
EW-1	10/27/94	ND	11	0	95.34	84.34
	6/30/95	ND	10.9	0	95.34	84.44
	9/21/95	11.25	11.27	0.02	95.34	84.07
	7/11/96	ND	9.74	0	95.34	85.60
	9/11/96	ND	10.88	0	95.34	84.46
	11/5/96	ND	11.94	0	95.34	83.40
	7/17/97	ND	10.38	0	95.34	84.96
EW-2	10/27/94	ND	10.37	0	95.24	84.87
	6/30/95	10.57	10.89	0.32	95.24	84.35
	9/21/95	13.9	13.92	0.02	95.24	81.32
	7/11/96	11.03	11.66	0.63	95.24	83.58
	9/11/96	Sheen	14.00	0	95.24	81.24
	11/5/96	Sheen	12.27	0	95.24	82.97
	7/17/97	8.99	9.09	0.1	95.24	86.15
EW-3	10/27/94	ND	10.05	0	95.78	85.73
	6/30/95	9.35	9.8	0.45	95.78	85.98
	9/21/95	10.92	11.08+	0.16	95.78	84.70
	7/11/96	8.53	8.64	0.11	95.78	87.14
	9/11/96	10.75	11.70	0.95	95.78	84.08
	11/5/96	Sheen	11.8	0	95.78	83.98
	7/17/97	9.13	9.33	0.2	95.78	86.45
EW-4	10/27/94	ND	8.05	0	94.32	86.27
	6/30/95	7.84	7.85	0.01	94.32	86.47
	9/21/95	8.22	8.24	0.02	94.32	86.08
	7/11/96	Sheen	6.44	0	94.32	87.88
	11/5/96	Sheen	8.08	0	94.32	86.24
	7/17/97	Sheen	5.43	0	94.32	88.89
HC-1	10/27/94	ND	13.25	0	97.50	84.25
	6/30/95	ND	12.00	0	97.50	85.50
	9/21/95	NM	13.42	0	97.50	84.08
	7/11/96	ND	11.92	0	97.50	85.58
	9/11/96	ND	12.90	0	97.50	84.60
	11/5/96	Could not locate due to snow				
	7/17/97	ND	11.27	0.00	97.50	86.23
HC-4	10/27/94	13.3	15.34	2.04	98.94	83.60
	6/30/95	11.89	15.49	3.6	98.94	83.45
	9/21/95	13.67	NM	NM	98.94	85.27
	7/11/96	11.58	12.93	1.35	98.94	86.01
	9/11/96	13.53	13.93	0.40	98.94	85.01
	11/5/96	11.82	13.62	1.80	98.94	85.32
	7/17/97	11.65	13.25	1.60	98.94	85.69
HC-5	11/5/96	ND	11.22	0	97.95	86.73
	7/17/97	Monument under standing water				

Table 1 - Avery Landing Groundwater Monitoring Data

Monitoring Location	Date	Depth to Product	Depth to Water	Product Thickness	T.O.C. Elevation	roundwater Elevation
MW-4	9/14/94	ND	12.88	0	99.76	86.88
	6/30/95	ND	10.19	0	99.76	89.57
	9/21/95	ND	11.95	0	99.76	87.81
	7/11/96	Sheen	10.18	0	99.76	89.58
	9/11/96	Sheen	11.33	0	99.76	88.43
	11/5/96	Lost during the road construction				
MW-5	10/27/94	ND	10.45	0	97.76	87.31
	6/30/95	ND	9.13	0	97.76	88.63
	9/21/95	ND	10.83	0	97.76	86.93
	7/11/96	ND	8.98	0	97.76	88.78
	9/11/96	ND	10.71	0	97.76	87.05
	11/5/96	ND	10.65	0	97.76	87.11
	7/17/97	ND	8.75	0	97.76	89.01
MW-11	9/14/94	12	NA	NA	98.16	NA
	6/30/95	5.54	7.25	1.71	98.16	90.41
	7/11/96	6.34	10.00	3.66	98.16	88.16
	9/11/96	3.25	7.20	3.95	98.16	90.96
	11/5/96	3.05	7.20	4.15	98.16	90.96
	7/17/97	6.33	9.99	3.66	98.16	88.17
P-1	10/27/94	ND	17.31	0	101.42	84.11
	6/30/95	ND	16.72	0	101.42	84.70
	9/21/95	ND	17.4	0	101.42	84.02
	7/11/96	ND	15.87	0	101.42	85.55
	9/11/96	ND	16.98	0	101.42	84.44
	11/5/96	ND	17.06	0	101.42	84.36
	7/17/97	ND	15.34	0	101.42	86.08
P-2	10/27/94	ND	15.87	0	100.06	84.19
	1/0/00	ND	15.26	0	100.06	84.80
	9/21/95	ND	16.04	0	100.06	84.02
	7/11/96	ND	14.52	0	100.06	85.54
	9/11/96	ND	15.62	0	100.06	84.44
	11/5/96	ND	15.08	0	100.06	84.98
	7/17/97	ND	13.92	0	100.06	86.14
River EW-1	10/27/94					83.12 *
	6/30/95					84.03 **
	9/21/95					82.24
	7/11/96					83.74 ***
	9/11/96					83.74
	11/5/96					83.16
	7/17/97					84.15

Table 1 - Avery Landing Groundwater Monitoring Data

Monitoring Location	Date	Depth to Product	Depth to Water	Product Thickness	T.O.C. Elevation	roundwater Elevation
River EW-2	10/27/94					84.41
	6/30/95					85.32
	9/21/95					83.53
	7/11/96					85.03
	9/11/96					83.85
	11/5/96					83.59
	7/17/97					85.35
River EW-3	10/27/94					85.16 *
	6/30/95					86.07
	9/21/95					84.28
	7/11/96					85.78 ***
	9/11/96					84.60
	11/5/96					84.10
	7/17/97					86.31
River EW-4	10/27/94					86.49 *
	6/30/95					87.40
	9/21/95					85.61
	7/11/96					87.11 ***
	9/11/96					85.93
	11/5/96					86.44
	7/17/97					87.27

All measurements in feet.

* River elevation was extrapolated from the river surface slope measured in 1995 and the river elevation measured south of EW-2 in 1994.

** River elevation was extrapolated from river surface slope, based on river elevations measured south of EW-2, EW-3, and EW-4 in 1995.

*** River elevation was extrapolated from river surface slope, and the wood dock benchmark

ND - Not Detected
NA - Not Available
NM - Not Measured

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